Edna G Olds Academy
A L.E.A.D. Academy

Our vision for Design Technology at Edna G Olds Academy – Design Technology Curriculum Statement

Design Technology vision

I believe every child should be excited and motivated by Design Technology lessons. They should have a clear understanding of what Design Technology is and use their learning to develop their entrepreneurial ways of thinking. I wish every child access to a range of high quality resources and experiences to make links with real designers or visits to places of design and making.

Design Technology Intent

At Edna G Olds Academy, we want our children to feel inspired by our DT provision to grow up wanting to be designers, chefs, architects or engineers. Our pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. The pupils will learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens.

Through our engaging and curious curriculum, we are learning to build and apply a repertoire of knowledge, understanding and skills. We will use this knowledge in order to design and make high-quality prototypes and products for a wide range of users. This will enable them to critique, evaluate and test their ideas and products. The children will also be given opportunities to cook and prepare food, ensuring they learn the principles of good nutrition and food hygiene.

Design Technology Implementation (including pedagogy)

At Edna G Olds Primary Academy, Design Technology is taught each half term with a blocked week of learning. Each half term focussing on a different specific area of Design Technology. This allows the children to focus on developing their knowledge and skills, for each area in depth. We have developed a progression of skills with each year group, which enables pupils to build on, develop and revisit their skills each year.

All lessons follow the 'REAL' model for teaching and learning:
Reflect -what you already know?
Educate- the learning you are going to be doing today
Apply- application of what you have been taught
Learnt- what have you learnt today?

Medium term planning for all units will cover key Design technology concepts: Design, make, evaluate. We focus on the areas of mechanisms, structures, food and textiles. The design process will be rooted in real life, relevant contexts to give meaning to learning. While making, children are given choice and a range of tools to choose freely from. To evaluate, children should be able to evaluate their own products against a design criteria and refer back to the user the product was created for. Each of these steps should be rooted in technical knowledge and vocabulary.

The curriculum is adapted to ensure that each pupil can access Design Technology lessons. Work is planned with collaboration for working together. Tools and materials are well chosen to ensure that

all children can handle them independently. Work scrutiny and lesson observations will show clear progression across the key stages.

EYFS

The Early Years Foundation Stage Curriculum supports children's understanding of Design Technology through the planning and teaching of 'Expressive Art and Design'. This aspect is about how to approach making a piece of artwork or model. The children learn to safely use a range of tools and media, experimenting with colour, texture, form and functions. The children also share their creations and explain the process they have used. They are provided with daily opportunities to pursue these activities both indoors and outdoors.

Practitioners support the children by raising questions such as, 'I wonder what will happen if…?', 'What else could we try?', 'What could it be used for?' and 'How might it work?' This ensures that their engagement and curiosity is piqued.

Key Stage 1

In line with the national curriculum 2014, the curriculum at Edna G Olds Academy aims to ensure that all pupils:

- design purposeful, functional, appealing products for themselves and other users based on design criteria
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.
- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria
- build structures, exploring how they can be made stronger, stiffer and more stable
- Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Key Stage 2

In line with the national curriculum 2014, the curriculum at Edna G Olds Academy aims to ensure that all pupils:

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.

- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.
- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.
- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- Understand how key events and individuals in design and technology have helped shape the world.
- Apply their understanding of how to strengthen, stiffen and reinforce structures that are more complex.
- Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- Apply their understanding of computing to program, monitor and control their products.

Design Technology pedagogy

Key pedagogy that underpins the teaching of Design Technology at Edna G Olds Academy includes the following:

1. Questions and Questioning

The beginning of each topic is launched with a problem that needs to be solved. Through the use of questioning we provoke the children's attention, rouse curiosity and interest. Some useful key questions could be; 'Why do you think that happened?' 'How do you think this works?' 'What would happen if we did...' We encourage the children to ask questions as this helps to develop their questioning techniques, and develop critical thinking.

2. Speaking and listening, discussion and debate: Oracy

Speaking and listening is an important part of Design Technology. We give children opportunities to develop their oracy through:

- Problem-solving using a hook to gain curiosity.
- Group discussion to test meaning and refine ideas
- Asking children to pose questions, to predict, to evaluate.
- Explaining their thinking processes and ideas, and justify their designs.

3. Constructivism and Social Constructivism.

In Design Technology lessons we use project work, exploration, and inquiry based learning. This ensures the children have hands on opportunities to discover how things work, and can make links with real life products. It will also develop their ability to problem solve and to work collaboratively.

Group work is encouraged wherever possible, as this elicits purposeful discussions and enables children to take a lead in their own learning with the teacher as a skilled facilitator, obtaining the best results from the children.

4. Exploring historical and present day innovators and designers

It is important that when we researching and learning about fashion designers, innovators or engineers, that we are mindful to the historical legacy of that individual and we think about the wider consequences of the product/ structure they produced. We must endeavour to use examples of ethnic minorities and females where possible to broaden the scope of our curriculum.

Wider curriculum Implementation expectations:

At Edna G Olds we place great importance on children to develop their memory and recall skills. We ensure that there are regular opportunities to review the learning that has taken place in previous lessons, and we revisit and refine skills previously taught. At the start of each topic, children will have the opportunity to share what they already know about a current topic.

Impact

The curriculum is designed to ensure pupils will become resourceful, innovative, enterprising and capable citizens. Through evaluation of past and present design technology they will develop a critical understanding of its impact on daily life. High quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Children will develop creative, technical and practical expertise to confidently complete everyday tasks and take part in our increasingly technological world. They will build and apply a toolkit of skills, develop knowledge and understanding in order to make high quality prototypes and products for a range of users and test and evaluate their ideas and products and those of others. They will understand and apply the principles of nutrition and learn how to cook.

Children leaving Edna G Olds Academy will be reaching at least age related expectations, and this will be evidenced by work in Topic books, prototypes, and in creative ways on Showbie.